

REMARKS

Applicant respectfully requests reconsideration of this application as amended. Claims 18-20, 22-25 and 27 have been amended. Claims 1-17 have been cancelled without prejudice. No new claims have been added. Therefore, claims 18-28 are presented for examination. The following remarks are in response to the final Office Action, mailed February 12, 2007.

35 U.S.C. § 112 Rejection

Claims 20 and 25 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 20 and 25 have been amended. Accordingly, Applicants respectfully request the withdrawal of the rejection of claims 20 and 25.

35 U.S.C. § 102(b) or §103 Rejection

Claims 18-28 stand rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Herbst, II, U.S. Patent No. 5,457,342 ("Herbst").

Claims 18-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chu, et al., U.S. Patent No. 6,424,533 ("Chu") in view of Richman, U.S. Patent No. 4,685,081 ("Richman").

Claim 18, as amended, recites:

An apparatus comprising:
a heat sink comprising a thermoelectric (TEC) module having a polarity,
the polarity capable of being adjusted to direct or redirect heat in

one or more directions to melt or un-melt a thermal interface material (TIM); and
the thermal interface material (TIM) coupled with the heat sink, the TIM receiving the heat in the heat sink upon changing of the polarity to melt the TIM up to an acceptable melt level to be applied to or removed from the heat sink.
(emphasis added)

Herbst discloses an “integrated circuit cooling apparatus including a *heat-conductive base plate* to be placed against an integrated circuit, a *Peltier Effect cooling module* having a cooling side connected to a top surface of the heat-conductive base plate, a heat radiator assembly connected to a heating side of the Peltier Effect cooling module and a *fan assembly* juxtaposed next to a heat-radiating portion of the heat radiator assembly.” (emphasis added) The Examiner relies on Richman to make up for the deficiencies of Herbst (see Office Action, mailed 02-12-07, page 3). Richman discloses an “electronic device . . . is maintained within the narrow temperature band by a Peltier circuit.” (Abstract) Richman further discloses the “Peltier circuit has the advantage that, by reversing the direction of current flowing through the Peltier circuit, the active Peltier circuit junction can be alternately used to *heat or chill the bubble memory device*. Thus, it is possible *to narrow the temperature range of operation of a bubble memory device in order to allow bubble memory device to be of a type with a limited permissible temperature range.*” (col. 4, lines 6-13; emphasis added)

In contrast, claim 18, as amended, in pertinent part, recites “the polarity capable of being adjusted to direct or redirect heat in one or more directions to melt or un-melt a thermal interface material (TIM); and the thermal interface material (TIM) coupled with the heat sink, the TIM receiving the heat in the heat sink upon changing of the polarity to melt the TIM up to an acceptable melt level to be applied to or removed from the heat sink.” (emphasis added) Herbst does not teach or reasonably suggest at least this feature

of claim 18. Applicants respectfully submit that the *Peltier circuit* of Richman is not the same as the above-mentioned features of claim 18. For example, merely *heating or chilling the bubble memory device* “*to narrow the temperature range of operation of a bubble memory device in order to allow bubble memory device to be of a type with a limited permissible temperature range*” (col. 6, lines 6-14; emphasis added) **is not the same** as “TIM receiving the heat in the heat sink upon changing of the polarity to melt the TIM up to an acceptable melt level to be applied to or removed from the heat sink” as recited by claim 18. (emphasis added) Stated differently, the mere *narrowing of the temperature range* to be a *limited permissible temperature range* **is not equivalent to** melting the TIM up to an acceptable melt level to be applied to or removed from the heat sink via the changing of the polarity as recited by claim 18. Accordingly, Applicants respectfully request the withdrawal of the rejection of claim 18 and its dependent claims.

Claim 23 includes limitations similar to those of claim 18. Accordingly, Applicants respectfully request the withdrawal of the rejection of claim 23 and its dependent claims.

Conclusion

In light of the foregoing, reconsideration and allowance of the claims is hereby earnestly requested.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Request for an Extension of Time

Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.


Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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